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(71) *Sökande* / *Applicant (s)* — *AstraZeneca AB, Södertälje SE*

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PATENT- OCH REGISTRERINGSVERKET
SWEDEN

Postadress/Adress
Box 5055
S-102 42 STOCKHOLM

Telefon/Phone
+46 8 782 25 00
Vx 08-782 25 00

Telex
17978
PATOREG S

Telefax
+46 8 666 02 86
08-666 02 86

A CONTAINER

The present invention relates to a container which can hold tablets or liquids, for example, for use in the pharmaceutical, chemical and food industries and in particular to a child resistant locking arrangement for a container. The object of the invention is to ensure that the container is easy to open, in particular, for elderly and disabled persons and that the container is child resistant and can be sealed to prevent excessive ingress of water vapour.

Containers that have child resistant features are now generally available but these containers are typically very difficult for elderly or disabled persons to open. Reference should now be made to US patent No. 5908125 and other patents in the same area of technology. In general, child resistant containers require the user to simultaneously squeeze and turn the closure, or push and turn the closure, in order to release the closure from the container body. However, elderly persons or persons with dexterity problems find that the force required to squeeze or push the closure and simultaneously rotate the closure is too great or that they experience pain in attempting to open the closure. Those suffering from rheumatoid arthritis and osteoarthritis will find that they have to avoid any movement, which involves gripping, twisting or bending of the wrist.

Known child resistant containers comprise a cap locking arrangement whereby the user has to turn a cap and align two dots on the outer surface of the container. In this position, the cap can be pushed and then flipped open. However, after use, the user has to remember to turn the cap again so that the two dots are no longer aligned otherwise the container is more readily opened and is no longer child resistant. Furthermore, when this type of container is opened, the cap partially obscures the view of the contents of the container.

The present invention aims to overcome the disadvantages of the prior art containers by providing a container that is both child resistant and user-friendly for the elderly and disabled. Therefore, the force required to open the closure is relatively small and the opening procedure does not require the user to simultaneously apply a pushing force and a turning force.

According to a first aspect of the present invention, there is provided a container for solids or liquid comprising a hollow body which holds the contents and a closure which cooperates with the body to close the container, wherein the container comprises a locking part for securing the closure, the locking part being moveable with respect to both the body and the closure and wherein the locking part carries an indicator which must be aligned with a similar indicator on the closure and/or the body before the closure can be released by the locking part to open the container.

Preferably, the locking part is slideable from a locked condition wherein the indicators are not aligned to an unlocked condition wherein the indicators are aligned.

Preferably, the locking part is slideably attached to the closure, the arrangement being such that the locking part is slideable in a lateral direction across the closure.

The locking part preferably comprises engaging means for engaging the body.

The body preferably comprises engaging means for engaging the locking part.

Preferably, the engaging means of the locking part is an elongate flange.

Preferably, the engaging means of the body is a protrusion that is connected to the body, the arrangement being such that in the locked condition the protrusion engages the elongate flange to prevent the removal of the closure and in the unlocked condition the elongate flange is distant from the protrusion such that the closure is removable from the body.

The protrusion is preferably deflectable in one direction such that the elongate flange will deflect the protrusion and slide past the protrusion as the closure is being placed onto the body and the indicators are not aligned.

Preferably, the elongate flange is formed with a gap disposed between the ends of the flange, the arrangement being such that in the unlocked condition the gap is in register with the protrusion such that the closure is removable from the body, and in the locked condition the gap is not in register with the protrusion such that the closure is not removable from the body.

Preferably, locking part is an elongate member formed with an elongate flange, wherein the elongate member is slideable such that a distal end of the elongate member extends beyond the closure and the body so forming a cantilevered arrangement. The arrangement is such that the distal end of the elongate member extends beyond the closure and the body in the unlocked condition so forming a cantilevered arrangement. The extended distal end forms a lever that may be used to help remove the closure from the body.

Preferably, the engaging means of the locking part for engaging the body comprises two elongate flanges formed along each longitudinal side of the elongate member.

The two elongate flanges of the locking part are preferably each received by and are slideable through respective corresponding grooves formed in the closure.

The engaging means of the body for engaging the locking part preferably comprises two protrusions, the arrangement being such that each protrusion engages a respective elongate flange to prevent the removal of the closure and in the unlocked condition the respective elongate flanges are distant from the protrusions such that the closure is removable from the body.

The closure is preferably pivotally fixed to the body via a hinge, the arrangement being such that in the unlocked condition the distal end of the elongate member extends in a direction away from the hinge and forms a lever that provides in increased turning moment about the

hinge. The distal end of the elongate member in the unlocked condition also provides a handle lever that can be gripped or pushed to help open the closure.

The body is preferably a tubular shape having one end closed by a base wall and an opposite neck end being partially covered by an upper wall formed with an access hole. The outermost surface of the upper wall and the radially inner surface of the side wall of the container forming a recessed platform onto which the contents of the container may be placed for inspection when the closure has been removed.

According to a second aspect of the present invention, there is provided a container for solids or liquid comprising a hollow body which holds the contents and a closure which cooperates with the body to close the container, wherein the closure comprises an elongate member is slideablly connected to the closure, the arrangement being such that in an extended condition a distal end of the elongate member extends beyond the closure and the body so forming a cantilevered arrangement. The arrangement is such that the distal end of the elongate member extends beyond the closure and the body in the unlocked condition so forming a cantilevered arrangement. The extended distal end forms a lever that may be used to help remove the closure from the body.

A preferred embodiment of the present invention will now be described in detail, by way of example only, with reference to the accompanying drawings, of which:
Figure 1 is a perspective view of a container in the closed and locked position;
Figure 2 is a perspective view of the container in Figure 1 when in the closed and unlocked position before the closure is opened;
Figure 3 is a perspective view of the container in Figure 1 with the closure opened;
Figure 4 is a top perspective view of the container in Figure 3;
Figure 5 is a side view in direction X of the container in Figure 2; and
Figures 6, 7, 8 and 9 are left-hand side, right-hand side, top plan and bottom views respectively of the container in Figure 5.

In Figures 1 to 9, a container according to the present invention is depicted. The container comprises a hollow body 1 holding solid or liquid contents and a closure 2 pivotally connected to the body 1 by a hinge 3, which closes the container and a slideable locking part in the form of an elongate member 4. Two indicator lines A are located on closure 2 and an indicator line B is located on the elongate member 4. It is only when the indicator B is aligned, by sliding the elongate member 4, with the line A (see Figure 2) that the closure 2 can be opened by lifting or flipping the extended distal end 14 of the elongate member 4.

The elongate member 4 is slideably attached to the closure 2, the arrangement being such that the locking part is slideable in a lateral direction across the closure 2. The elongate member 4 comprises two flanges 6,8 that extend along the respective longitudinal edges of the member 4. The two elongate flanges 6, 8 of the member4 are each received by and are slideable through respective corresponding grooves formed in the closure 2.

The body 1 comprises two protrusions 10,12 formed in the uppermost edge of the body wall. The protrusions 10, 12 extend generally towards each other, the arrangement being such that in the locked condition the protrusions10, 12 engage the elongate flanges 6, 8 to prevent the removal of the closure 2.

The elongate flanges are each formed with a gap 16, 18 disposed between the ends of the flange, the arrangement being such that in the unlocked condition the gaps 16, 18 are inline with the protrusions 10, 12 such that the closure 2 is removable from the body 1, and in the locked condition the gaps 16, 18 are not inline with the protrusions 10, 12 and will engage with the protrusions 10, 12 if the someone tries to remove the closure 1 from the body 1. The protrusions 10, 12 are preferably deflectable in one direction such that the elongate flanges 6, 8 will deflect the protrusions 10, 12 and slide past the protrusions 10, 12 as the closure 2 is being placed onto the body 1 when the indicator lines A and B are not aligned.

The body 1 is a tubular form having one end closed by a base wall 20 and an opposite neck end 22 being partially covered by an upper wall 24 formed with an access hole 26. The outermost surface 28 of the upper wall 24 and the radially inner surface 30 of the sidewall of the container forming a recessed platform. The outermost surface 28 is inclined from the hinge 3 downwardly in a direction towards the base wall 20. The radially inner surface 30 provides a surface onto which the contents of the container may be placed for inspection when the closure 2 has been removed.

CLAIMS

1. A container for solids or liquid comprising a hollow body which holds the contents and a closure which cooperates with the body to close the container, wherein the container comprises a locking part for securing the closure, the locking part being moveable with respect to both the body and the closure and wherein the locking part carries an indicator which must be aligned with a similar indicator on the closure and/or the body before the closure can be released by the locking part to open the container..

2. A container as claimed in Claim 1, wherein the locking part is slideable from a locked condition wherein the indicators are not aligned to an unlocked condition wherein the indicators are aligned.

3. A container as claimed in Claim 2, wherein the locking part is slideably attached to the closure, the arrangement being such that the locking part is slideable in a lateral direction across the closure.

4. A container as claimed in Claim 3, wherein the locking part comprises engaging means for engaging the body.

5. A container as claimed in Claim 3 or claim 4, wherein the body comprises engaging means for engaging the locking part.

6. A container as claimed in claim 4 or claim 5, wherein the engaging means of the locking part is an elongate flange.

7. A container as claimed in claim 6, wherein the engaging means of the body is a protrusion that is connected to the body, the arrangement being such that in the locked condition the protrusion engages the elongate flange to prevent the removal of the closure and in the unlocked condition the elongate flange is distant from the protrusion such that the closure is removable from the body.

8. A container as claimed in claim 7, wherein the protrusion is deflectable in one direction such that the elongate flange will deflect the protrusion and slide past the protrusion as the closure is being placed onto the body and the indicators are not aligned.

9. A container as claimed in claim 8, wherein the elongate flange is formed with a gap disposed between the ends of the flange, the arrangement being such that in the unlocked condition the gap is in register with the protrusion such that the closure is removable from the body, and in the locked condition the gap is not in register with the protrusion such that the closure is not removable from the body.

10. A container as claimed in claim 9, wherein locking part is an elongate member formed with an elongate flange, and the elongate member is slideable such that a distal end of the

elongate member extends beyond the closure and the body so forming a cantilevered arrangement.

11. A container as claimed in claim 10, wherein the engaging means of the locking part for engaging the body comprises two elongate flanges formed along each longitudinal side of the elongate member.

12. A container as claimed in claim 11, wherein the two elongate flanges of the locking part are each received by and are slideable through respective corresponding grooves formed in the closure.

13. A container as claimed in claim 12, wherein the engaging means of the body for engaging the locking part comprises two protrusions, the arrangement being such that each protrusion engages a respective elongate flange to prevent the removal of the closure and in the unlocked condition the respective elongate flanges are distant from the protrusions such that the closure is removable from the body.

14. A container as claimed in any one of the previous claims, wherein the closure is pivotably fixed to the body via a hinge.

15. A container as claimed in any one of the preceding claims, wherein The body is a tubular shape having one end closed by a base wall and an opposite neck end being partially covered by an upper wall formed with an access hole.

16 A container for solids or liquid comprising a hollow body which holds the contents and a closure which cooperates with the body to close the container, wherein the closure comprises an elongate member is slideablly connected to the closure, the arrangement being such that in an extended condition a distal end of the elongate member extends beyond the closure and the body so forming a cantilevered arrangement.

ABSTRACT

The present invention relates to a container which can hold tablets or liquids, for example, for use in the pharmaceutical, chemical and food industries and in particular to a child resistant locking arrangement for a container. The object of the invention is to ensure that the container is easy to open, in particular, for elderly and disabled persons and that the container is child resistant and can be sealed to prevent excessive ingress of water vapour. The container comprises a hollow body holding solid or liquid contents and a closure pivotally connected to the body by a hinge, which closes the container and a slideable locking part in the form of an elongate member. Two indicator lines are located on closure and an indicator line is located on the elongate member. It is only when the indicator is aligned, by sliding the elongate member, with the line that the closure can be opened by lifting or flipping the extended distal end of the elongate member.

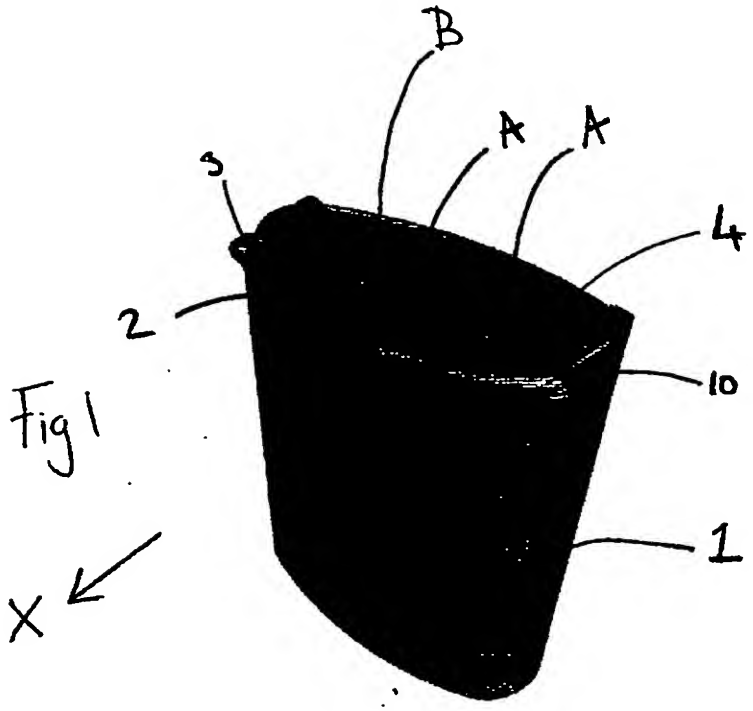
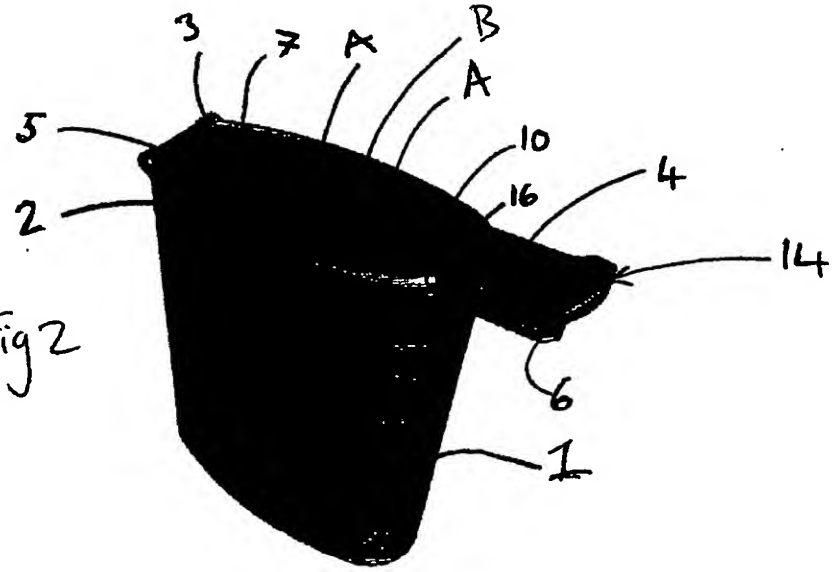


Fig 1



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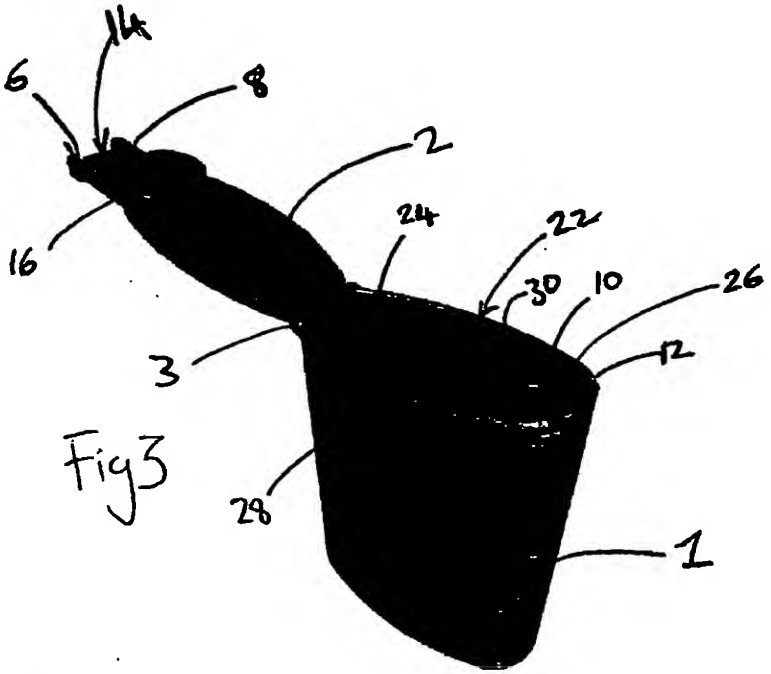

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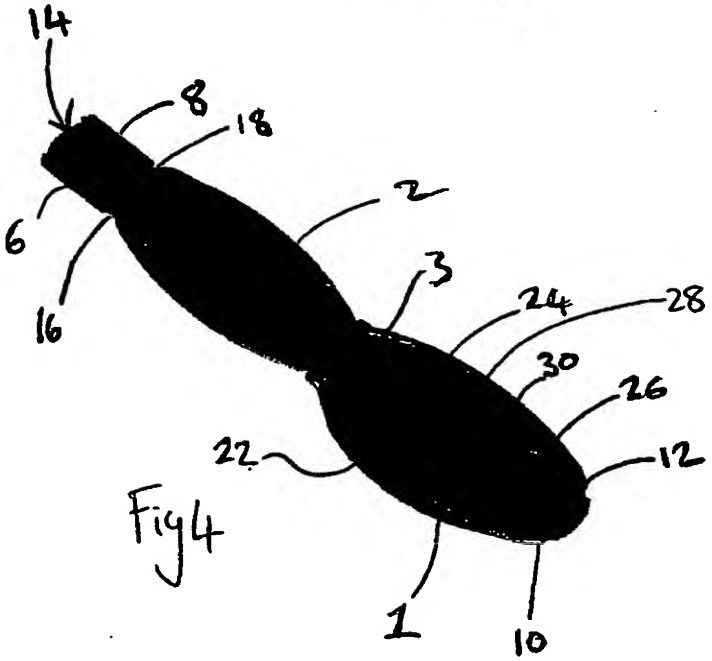

Fig4

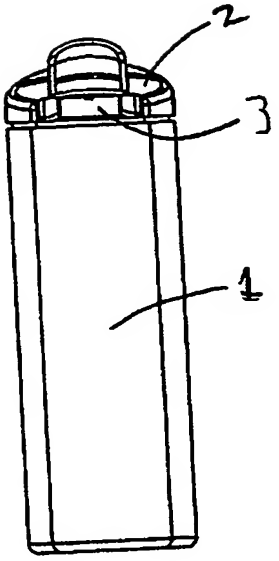

Fig 6

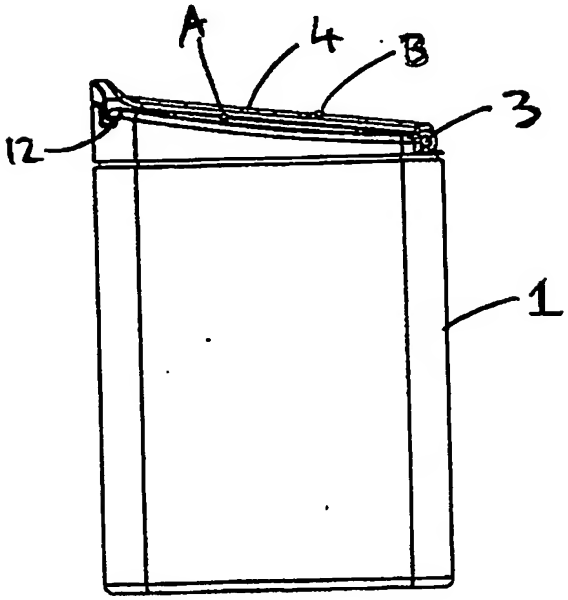

Fig 5

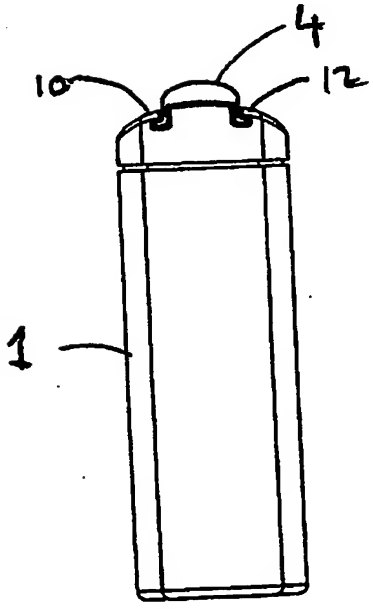

Fig 7

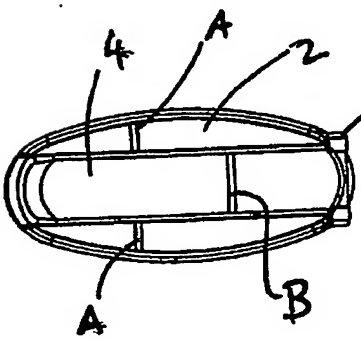

Fig 9

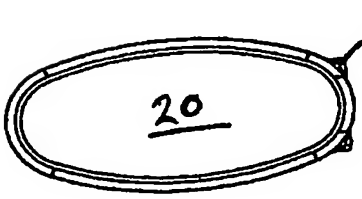

Fig 8